



Growing Western Canola Case Study (High Rainfall) 2005

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Location

“Yantecup” is in the Kojonup Shire, approximately 30km south of Kojonup townsite. The Thorn properties span over 2000ha supporting mixed cropping, sheep and cattle enterprises.

Rainfall: **500mm** ave - Kojonup experiences a mediterranean climate. Nearly all rainfall falls during the growing season, with summer rain not usually significant. Too much rainfall in too little time during the growing season is one of the biggest limitations to yield often resulting in water logging that reduces yield considerably.

Area sown to Canola in 2005:	380ha
Average yield last 5 years:	1.75t/ha
2005 yield:	1.42t/ha

History of Growing Canola:

The Thorns have grown canola since 1992. They have grown conventional, IT and TT canola, and at times bulked up new lines of canola for seed. The present program is 100% TT canola.

Soils:

Most of the soil on “Yantecup” is loams with varying gravel content. There are small patches of duplex sands. The greatest soil asset is high organic carbon (OC) which averages 3.5 to 4% across the property. The high yield potential of the properties is attributed to the high OC and relatively reliable rainfall pattern.

A liming strategy is in place. The whole property received 2 t/ha over the last few years. Soil testing to closely monitor pH in surface soils occurs with a plan to test deeper to identify sub-soil constraints and gain better data on total available nutrients.

Rotations:

The Thorn's emphasize the pasture phase in the rotation, due mainly to the unreliability of pulses. A legume dominant pasture is developed for at least 3 years before a paddock goes into crop. Canola is generally the first crop in the rotation due to the nutritional and herbicide advantages it offers and the lack of problems with root diseases.

A common rotation is Canola – Wheat - Barley (or Oats) and then back to pasture. A percentage of the farm is not suited to cropping due to water logging, some paddocks have a longer rotation in order to maintain a higher total cropped area. These paddocks usually have an additional phase of lupins or peas in between the two cereal phases.



Erosion in canola paddocks on "Yantecup" caused by excessive rain in Winter 2005

2005 Program:

The 2005 season presented many challenges. The main challenge was excessive winter rainfall. Not only did this make it very difficult to sow crops it also made paddock access very difficult for post emergent applications of insecticides and nitrogen which had to be applied by air.

The Thorn's have been using liquid fertilizer since 2002. They apply liquids both via their DBS bar as starter N in-furrow and also post emergent usually with an added pesticide. The Thorn's apply liquid flexi-N, NK, NS, NKS and in 2005 trialed NP. The Thorns appreciate greater flexibility that liquids provide in matching nutrients to specific paddock requirements. They hope that soon 100% of nutrients will be able to be economically applied in liquid form.

Fertilizer program

Paddocks coming into rotation after long term pasture receive less nitrogen than paddocks that have been in crop in previous years. All paddocks are soil tested and nutrients are matched with yield potential. Paddocks coming out of pasture are generally assessed throughout the growing season with nitrogen use dependant on seasonal conditions like leaching events and legume percentage in the pasture phase. Canola paddocks going onto pasture don't usually receive liquid fertiliser in furrow, instead they are topped up during the season if needed.

Table 1. An example of an average fertiliser program on canola after pasture

Timing	Product	Rate	Cost (\$/ha)
In furrow	Ktill Plus	100	59
3-4 leaf	Flexi NS	50	19
Bolting	Flexi N	40	19
		Total	97

The total nutrients added are: 45 kg N + 14 kg P + 10 kg K + 8 kg S

Paddocks that have been in long term cropping rotation essentially receive more nutrients.

Table 2. An example of nutrient supply for a long term cropping paddock

Timing	Product	Rate	Cost (\$/ha)
In furrow	Ktill Plus	120	70
In furrow	Flexi N	50	24
3-4 leaf	Flexi NS	50	19
Bolting	Flexi N	50	24
		Total	137

The total nutrients added are: 70 kg N + 16.8 kg P + 11.5 kg K + 12 kg S

The seeding operation is done using a DBS bar with 12 inch spacing. The wide spacing is done simply for trash flow, with a policy on minimum burying done on Yantecup. All paddocks are mapped when seeded and yield mapped when harvested.

Herbicide regime

Canola is always seeded first therefore there is reduced opportunity for a double knock in the canola program. Usually just one knockdown using Glyphosate and Goal is applied to kill any weeds. One of the hardest weeds to kill in the knockdown is clover, a spike is always added for clover control. Post seeding pre emergent chemical application is a mixture of 1.1kg atrazine + 200ml Talstar, with Chlopyrifos added if lucerne flea or false wire worm are a threat. Post emergent is generally 1.1kg atrazine + 0.5% Uptake at 2-3 leaf stage, and a grass selective to follow. The type of grass selective used is based on the history of each paddock. Trifluralin will be more extensively used in the canola program for ryegrass control as the efficacy of triazines on ryegrass diminishes.

A concerted effort to manipulate pasture, spraytop and graze heavily is carried out on canola paddocks prior to entry into the crop phase. The use of summer crops such as sorghum in suitable seasons can also help reduce the weed seed bank and dry out soils prior to canola.

The very soft finish to the 2005 season resulted in canola oil content in the vicinity of 46% even though overall yield was low. The overall canola average of 1.42t/ha was disappointing. However when considering the amount of canola in the program that did not come up, and was unable to be re-sown it was not too bad a result. The canola that was harvested did average above 2 t/ha.



The Thorn's bar at work during the 2005 growing season

Where are we headed?

Hopefully there will be continued improvement in new varieties due to breeding.

A more stringent integrated weed management program is being put in place as some herbicide groups fail to control weeds like they used to.

The Thorn's will target high production paddocks in order to maximize their yield and increase average yield.

Genetically modified crops may become a part of their program one day. However GM crops would need to be much more profitable and sustainable before they are grown.